

AMENDMENTS TO THE CLAIMS

1-36. (Canceled)

37. (New) A medical electrode, comprising:

a carrier;

at least one electrically contactable conductor surface arranged on said carrier, said at least one electrically contactable conductor surface having a connecting element for connection to circuitry;

at least one current-equalizing conductor surface that is arranged on said carrier (a) at a spacing from said at least one electrically contactable conductor surface, (b) so as to be electrically separated from said at least one electrically contactable conductor surface and (c) so as to surround said at least one electrically contactable conductor surface on said carrier;

wherein said at least one current-equalizing conductor surface is free from connecting elements for connection to circuitry in order to remain electrically uncontacted on said carrier.

38. (New) The medical electrode as set forth in claim 37 wherein said connecting element is a tab.

39. (New) The medical electrode as set forth in claim 37, wherein said at least one current-equalizing conductor surface extends along said at least one electrically contactable conductor surface.

40. (New) The medical electrode as set forth in claim 37, wherein said at least one current-equalizing conductor surface surrounds a plurality of current-equalizing conductor surfaces on said carrier.

41. (New) The medical electrode as set forth in claim 37, wherein said at least one current-equalizing conductor surface is shaped as a circular ring.

42. (New) The medical electrode as set forth in claim 37, wherein said at least one current-equalizing conductor surface comprises a conductor surface that extends into an

intermediate space between two spaced electrically contactable conductor surfaces arranged on said carrier or into a recess configuration in a conductor surface.

43. (New) The medical electrode as set forth in claim 37, wherein said at least one current-equalizing conductor surface comprises two current-equalizing conductor surfaces that are curved parallel.

44. (New) The medical electrode of claim 37, wherein said at least one electrically contactable conductor surface comprises at least two electrically separated contactable conductor surfaces arranged on said carrier, wherein one of said electrically contactable conductor surfaces at least partially surrounds another of said conductor surfaces.

45. (New) The medical electrode as set forth in claim 44, wherein an inner one of said at least two electrically separated contactable conductor surfaces is surrounded by an outer conductor surface of said at least two electrically separated contactable conductor surfaces, said outer conductor surface extending around said inner said conductor surface with a constant gap spacing relative to an outer edge thereof.

46. (New) The medical electrode as set forth in claim 44, wherein an inner conductor surface of said at least two electrically separated contactable conductor surfaces is of a substantially round circular configuration and is surrounded by an outer conductor surface of said at least two electrically separated contactable conductor surfaces, said outer conductor surface being in the form of a circular ring.

47. (New) The medical electrode as set forth in claim 44, wherein an outer conductor surface of said at least two electrically separated contactable conductor surfaces surrounds an inner conductor surface of said at least two electrically separated contactable conductor surfaces over an angular range of more than 270°.

48. (New) The medical electrode as set forth in claim 44, wherein at least one inner conductor surface of said at least two electrically separated contactable conductor surfaces and

an outer conductor surface of said at least two electrically separated contactable conductor surfaces surrounding said inner conductor surface have respective projecting contacting elements for electrode cables, wherein said connecting elements are arranged laterally, one beside the other, and parallel to each other.

49. (New) The medical electrode of claim 44, wherein said at least two electrically separated contactable conductor surfaces comprises two electrically contactable conductor surfaces that are in different radial positions and that have surface areas and peripheral lengths thereof that are substantially equal.

50. (New) The medical electrode of claim 44, wherein said at least two electrically separated contactable conductor surfaces comprise at least one conductor surface of a hook-shaped configuration, said hook-shaped configuration surrounding an other of said at least two electrically separated contactable conductor surfaces.

51. (New) The medical electrode of claim 44, wherein each of said at least two electrically separated contactable conductor surfaces comprise hook-shaped projections that are interleaved one into the other.

52. (New) The medical electrode as set forth in claim 37, wherein an outside contour of said at least one electrically contactable conductor surface is round.

53. (New) A method of equalizing the current in a medical electrode, comprising the steps of:

providing a medical electrode comprising a carrier, at least one electrically contactable conductor surface arranged on the carrier, the at least one electrically contactable conductor surface having a connecting element, at least one current-equalizing connector surface that is arranged on the carrier (a) at a spacing from the at least one electrically contactable conductor surface, (b) so as to be electrically separated from the at least one electrically contactable conductor surface and (c) so as to surround the at least one electrically contactable conductor surface on the carrier, wherein the at least one current-equalizing conductor surface is free from

contacting elements for connection to circuitry in order to remain electrically uncontacted on the carrier;

connecting circuitry that delivers to or monitors energy from the at least one electrically contactable conductor surface;

delivering or receiving an energy transmission from the circuitry to the at least one electrically contactable conductor surface while leaving the at least one current-equalizing conductor surface on the carrier electrically unconnected to circuitry and equalizing the distribution of the current with the at least one current-equalizing conductor surface on the carrier.

54. (New) The method of according to claim 53, further comprising providing the medical electrode so that the at least one current-equalizing conductor surface extends along the at least one electrically contactable conductor surface.

55. (New) The method according to claim 53, further comprising providing the medical electrode so that the at least one current-equalizing conductor surface surrounds a plurality of electrically contactable conductor surfaces.

56. (New) A medical system comprising:

circuitry selected from the group consisting of circuitry that monitors biopotentials and circuitry that provides electrical energy to a patient; and

a medical electrode comprising a carrier, at least one electrically contactable conductor surface arranged on the carrier, the at least one electrically contactable conductor surface having a connecting element for connection to circuitry, at least one current-equalizing conductor surface that is arranged on the carrier (a) at a spacing from the at least one electrically contactable conductor surface, (b) so as to be electrically separated from the at least one electrically contactable conductor surface and (c) so as to surround the at least one electrically contactable conductor surface on the carrier, wherein the at least one current-equalizing conductor surface is free from connecting elements for connection to circuitry in order to remain electrically uncontacted on the carrier, and wherein the at least one current-equalizing conductor

surface is spaced from the at least one electrically contactable conductor surface so as to provide improved current density distribution.